

ABSTRACT

Drift compensation systems and methods are presented for compensating the drift of a sensor within a manufacturing lot. The system comprises a sensor test sample manufactured from a lot of material having substantially similar chemical or metallurgical properties, a drift characterization tester, wherein the test sample is exposed to a predetermined thermal environment. Measurements of the test sample output are analyzed to provide a drift function describing the relationship between time and temperature from the thermal exposure measurements of the test sample in the drift characterization tester. Parameters associated with the drift function and the sensor test sample are stored in a memory storage component associated with a second sensor. The second sensor is manufactured from the same lot of material as the sensor test sample. A sensor system is manufactured comprising the second sensor and the memory storage component. A drift compensation instrument coupleable to the second sensor and the memory storage component of the sensor system is operable to retrieve the stored parameters of the drift function from the memory storage component and correct the output of the second sensor based on the drift function, thereby compensating the output drift of the sensors manufactured from the same lot of material.

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